

Set your teeth on EDGE: World's weirdest sharks and rays on the brink of extinction

December 4 2018



The largetooth sawfish (*Pristis pristis*) is not only #1 on the EDGE sharks and rays list, but is also the highest ranking EDGE species across all the different animal groups ranked, including corals, reptiles, amphibians, mammals and birds. Credit: (c) Simon Fraser University

Sharks that use a whip-like tail to stun their prey, rays with saws on their

faces, and river rays half the length of a bus are among the most unique species at risk of extinction according to the latest ranking from international conservation charity ZSL's (Zoological Society of London) pioneering EDGE of Existence programme.

The new list revealed today (4 December) ranks the world's 50 most Evolutionarily Distinct and Globally Endangered (EDGE) sharks, rays and chimeras—known collectively as Chondrichthyes.

These mythical-sounding (but very real) creatures have no bones in their bodies, only cartilage and appeared more than 400 million years ago, roaming the seas when dinosaurs lived. Each species on this list has few or no remaining close relatives, effectively representing distinct branches of the tree of life and making each of them truly irreplaceable. If they go extinct, we will have nothing like them left on the planet.

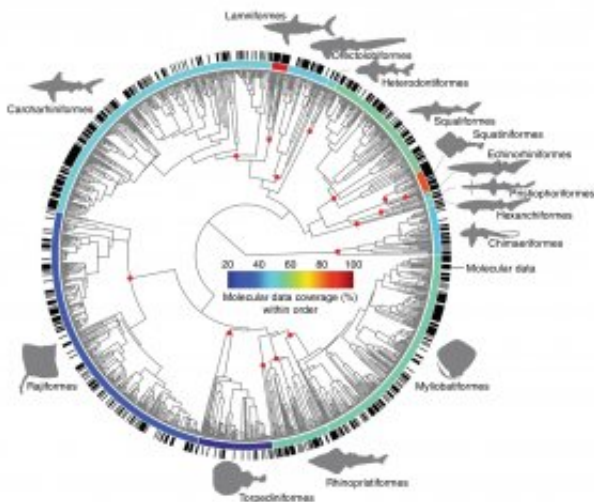
Topping the new list, at number one is the largetooth sawfish (*Pristis pristis*), which also holds the distinction of being the highest-ranking EDGE species in the world. Using an elongated snout (rostrum) lined with teeth on each side to slash at its prey, the large-tooth sawfish is facing threats from unsustainable fishing activities as it's often caught as by-catch in nets.

Despite the fearsome reputation of the great white shark and the well-recognised appearance of the hammerhead, sharks are one of the least-studied groups of animals—some so elusive they've never been captured on camera. Many of these species are threatened by targeted fishing, driven by a desire for shark fins or other body parts, as well as being unintentionally caught (bycatch).

Habitat degradation, due to coastal development, mangrove deforestation, water pollution and trawling, is also to blame for the steep decline in many of these populations. However, the new EDGE List

gives conservationists another tool to identify and prioritise species where there is a most pressing need for action.

EDGE Sharks co-ordinator and [marine biologist](#), Fran Cabada said: "Sharks, rays and chimeras—making up the cartilaginous fish, have been around since the age of the dinosaurs, but due to human activities, their modern relatives are facing threats all over the world. They're found in almost every [aquatic environment](#) and as many are [apex predators](#), i.e., at the top of the food chain—they're crucial to maintaining healthy ecosystems.



Representative phylogeny tree (taxon-complete) of Chondrichthyes. Taken from Stein and collaborators (2018): Global priorities for conserving the evolutionary history of sharks, rays and chimaeras. *Nature Ecology & Evolution*. Red dots highlight nodes defining orders.

"Unfortunately, sharks have a bad image. This means people often can't see beyond the negative, and usually exaggerated stories, and don't understand just how threatened and important they are.

"The new EDGE Sharks and Rays list gives us the opportunity to highlight the most unique sharks and rays on our planet which are also the most endangered, so that we can target conservation efforts where it's needed most. Many are overlooked and poorly known, so conservation actions targeted at these survivors of ancient lineages should be prioritised."

ZSL's Marine and Freshwater Conservation Programme Manager, Dr. Matthew Gollock added: "The EDGE Sharks and Rays list comprises some of the most interesting and unique fish we have on this planet. The modern extinction of a single species from this list would cause the loss of millions of years of evolutionary history.

"Since 2013, we have been working in collaboration with partner organisations in the Canary Islands for the conservation of the angel shark (*Squatina squatina*), #5 in the EDGE list, increasing our knowledge of this species and working with divers, fishers and policymakers to improve management and policy.

"Our successes from this project have allowed us to expand our work to Wales, UK, where we have taken a similar stakeholder-lead approach to collect sightings and community memories of the angel shark in order to better understand and conserve this Critically Endangered species across its range."

First established in 2007, the EDGE of Existence programme has previously published lists for amphibians, birds, corals, mammals and reptiles. The EDGE lists provide conservationists worldwide with a scientifically rigorous method of focusing their [conservation efforts](#) on animals and plants that represent a significant amount of threatened evolutionary history.

ZSL's EDGE of Existence programme works with partners including the

National Geographic Photo Ark and Fondation Segré to fund early-career conservationists striving to secure the future of EDGE [species](#) all around the world, through the EDGE Fellowship initiative. The first ever EDGE Fellowships on Sharks and Rays will begin in early 2019, implementing conservation actions for the [largetooth sawfish](#) and the pelagic thresher shark (*Alopias pelagicus*) in Asia.

Provided by Zoological Society of London

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